MACALC: A PROGRAM FOR SUPPORTING MODAL ANALYSIS OF ROCKS

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Modal analysis is one of the most common microscopic methods in the igneous, metamorphic, and sedimentary petrographic practice. Using this method two types of data series can be obtained: (1) relative quantity or frequency of rock-forming minerals, and (2) microscopic grain size distribution of rocks. Moreover, grain size distribution of certain minerals of the rocks may be also determined. By these data series further petrographic-petrologic conclusions, such as type of the texture, distinction of varieties and facies, cooling history, *etc.* can be drawn. In accordance with JÁRAI *et al*. (1997) we regard the modified Rosiwal's method, *i.e.* method of measuring along lines as the most favourable one. Its application requires no expensive or complex measuring and recording apparatus: the minimal requirement is only a scaled cross-line eyepiece. Moreover, relative quantity of the rock forming minerals as well as grain-size distribution can be simultaneously determined by the same measuring process. Due to its simplicity and acceptable accuracy the classic Rosiwal's method is widely used in analysis of rocks (see for example SAROCCHI & MACÍAS, 2004; SAROCCHI *et al*., 2005) and of some building materials (see for example ELSEN, 2000).

To eliminate the "huge" amount of paperwork, which has been regarded as the main disadvantage of this method, a computational data record and evaluation seems to be the most plausible solution. The Modal Analysis Calculator (MACALC) program introduced by this paper makes possible to evaluate the computational record, and creates tables on the basis of the measured data. The program selects and arranges the data by the optional grain-size intervals and mineralogical components. As a final result the program creates three tables listing the grain-size distribution and mineral composition data as well as statistical parameters. Calculations can be directly controlled by changing some parameters, *e.g.*, it determines the actual required length of the measuring line according to the fixed acceptable accuracy.

The Modal Analysis Calculator (MACALC) software performs all the computing that one needs to gain information about a modal analysis measurement. MACALC is a web-based program available through the Internet by using a web-browser (*e.g.* Internet Explorer 5.0, Netscape Navigator 4.8, Konqueror 3.0, *etc.*). No special requirements and no software installation are required from the client side. The address of the MACALC homepage is http://irh.inf.unideb.hu/macalc. To access the Modal Analysis Calculator the user must perform a free registration process by giving his/her name and e-mail address. The e-mail address is required only to contact the user, sending the necessary information to him. After the successful registration the user will get an e-mail containing his personal modal analysis calculator web-page data (address, login name and password) so he will be ready to use the MACALC software to perform modal analysis calculation.

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